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6 BEFORE THE STATE OF WASHINGTON
7 ENERGY FACILITY SITE EVALUATION COUNCIL

8 IN RE APPLICATION NO. 96-1)
9 OLYMPIC PIPE LINE COMPANY:)
10 CROSS CASCADE PIPELINE PROJECT)
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12 EXHIBIT _____ (KC - RT2)
13 REBUTTAL TESTIMONY OF KATY CHANEY
14 ISSUE: GEOTECHNICAL ISSUES
15 SPONSOR: OLYMPIC PIPE LINE COMPANY
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1 **R. State your name.**

2 A. Katy Chaney

3 **Q. What topics will you address in your rebuttal testimony?**

4 A. My rebuttal testimony is intended to respond to all of the testimony filed concerning
5 environmental or land use impacts related to the project, and the mitigation of those impacts. My
6 rebuttal testimony will address the following topics:

7 (1) Olympic's approach to environmental assessment and mitigation;

8 (2) Visual Impacts;

9 (3) Noise Impacts;

10 (4) Geotechnical hazards;

11 (5) Stream Crossings, Water Quality and Water Resources;

12 (6) Fish, Wildlife and Endangered Species

13 (7) Wetlands and Vegetation;

14 (8) Recreation;

15 (9) Land Use, including Agriculture.

16 For the Council's convenience, my rebuttal testimony has been divided into several different
17 exhibits, organized roughly according to the likely organization of the adjudicatory proceedings.
18 This exhibit addresses geotechnical issues.

19 **Q. What geotechnical information does the Application provide?**

20 A. The Application includes information on geology, soils, topography, erosion, and
21 geologic hazards.

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2 **Q. Did Dames & Moore also analyze the potential for geological and natural**
3 **hazards such as earthquakes and liquefaction?**

4 A. Yes, the Application includes a series of maps which show major geological faults
5 along the pipeline route. The geotechnical engineers then used the maps to identify
6 potential areas of concern based on the potential for liquefaction or settlement to
7 occur if a seismic event were to happen.

8 **Q. What information was used as a basis for these maps?**

9 A. The maps were compiled from previous work by Gower (1995), Geomatrix (1988,
10 1990), Mann and Meyer (1993), and Frankel (1996).

11 **Q. How were the topographic maps in the Application developed?**

12 A. A detailed aerial survey was performed for the ½ mile wide corridor. We then had
13 the aerial photographs digitized and imported them into our GIS system. The
14 geotechnical engineers then did some “ground-truthing” to confirm the information.

15 **Q. How were the topography maps used by the geotechnical engineers?**

16 A. The topography maps were used as a basis for determining areas along the pipeline
17 route that may be susceptible to avalanches or landslides. A screening procedure
18 was performed using an office study of the aerial photographs, information on
19 geology, and the topography maps. Based on this information, the geotechnical
20 engineers selected sites for field reconnaissance. High impact potential was
21 assigned to slopes in areas with evidence of slope instability, such as slopes with a
22 greater than 30 percent slope or known areas of inactive slope failure. In addition,
23 unstable land as evidenced by recent or active slope failure and generally incapable
24 of accommodating development without increasing instability was also given a high
25 impact potential.

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2 **Q. Based on this screening, how many sites were visited specifically for**
3 **landslide potential?**

4 A. As shown on Table 2.15-4 of the Application, there were 61 sites along the proposed route or
5 alternative routes that were visited on the ground or from the air if site access was not obtainable.
6 On the ground field work included a visual inspection, and soil borings, shovel tests, or hand
7 augering, depending on what was found at the site. The entire route was also reviewed from a
8 helicopter to make sure that all the susceptible sites were identified.

9 **Q. What were the results of these field visits?**

10 A. Based on what was found in the field, we developed a number of mitigation measures to be
11 applied during construction. Where possible the pipeline alignment has been moved away from
12 mass wasting locations identified as moderate and high hazards.

13 **Q. Could you describe any of those locations where the pipeline route has**
14 **been moved?**

15 A. The most noticeable route change has been in the area of the Saddle Mountains in eastern
16 Washington. The original route, as shown in the February 1996 Application, crossed the toe of
17 what is known as the "Corfu Landslide". The route has been moved away from this area to
18 parallel Highway 26. The revised route is shown in the May 1998 Revised Application, and in
19 the Map Atlas.

20 **Q. Has Dames & Moore performed additional work since the submittal of the May 1998**
21 **Revised Application?**

22 A. Yes. As part of negotiating with County agencies, we have made additional field visits with
23 County staff, including Randy Sleight of Snohomish County and Steve Bottheim of King County,
24 to some of the sites on the west side, including the Tolt River.

25 **Q. Has the proposed method for crossing the Tolt River been revised?**

1 A. Yes. The May 1998 Application showed that the crossing would be by trenching. The river
2 consists of two channels in the proposed crossing location. OPL proposed to divert the flow
3 from one channel to the other while they trenched across each channel. Since that time, OPL has
4 reevaluated the engineering of the crossing, and has proposed to use a horizontal directional drill
5 to cross under both channels of the river.

6 **Q. How does Olympic intend to stabilize soils during and after construction**
7 **to prevent erosion problems?**

8 A. Olympic has proposed a number of erosion and sediment control measures, many of which are
9 based on the Puget Sound Water Quality Handbook, to stabilize soils and to prevent erosion.
10 These measures are identified in Section 2.10 of the Application. Exposed and unworked soils
11 will be stabilized to protect soils from rain and flowing water, using practices such as vegetative
12 cover, mulching and the early application of a gravel base. Revegetation will occur as quickly as
13 possible, dependent upon the weather, and any seasonal considerations are recommended by a
14 vegetative specialist.

15 **Q. Will construction be limited to certain times of the year?**

16 A. If the permits are issued in the winter of 1999-2000, it would be Olympic's intent to begin
17 construction in the early spring, and to complete as much work as possible during the spring
18 through fall time period. There will be other restrictions on the project, including the
19 Department of Ecology's desire that work in eastern Washington occur when the moisture
20 content of the soil is higher to lessen or prevent wind-blown erosion, and timing to avoid certain
21 wildlife habitat areas during mating, nesting and spawning seasons, that will cause some
22 construction to occur during the winter months.

23 **Q. Will Olympic be preparing a detailed erosion and sedimentation control plan prior to**
24 **beginning construction?**

1 A. Yes. Prior to construction, Olympic will prepared a detailed, site-specific erosion and
2 sedimentation control plan and will submit that plan to EFSEC for approval. The basic elements
3 of the plan are described in Section 2.10 of the Application. Erosion and sediment control Best
4 Management Practices from the Stormwater Management Manual for the Puget Sound Basin
5 (WDOE, 1992) will be implemented wherever possible and applicable to the area of the route.

6 **Q. Are there other Dames & Moore witnesses who have additional information on these**
7 **geotechnical studies and surveys?**

8 A. Yes. Dr. Conrad Felice, formerly with Dames & Moore, directly supervised the geotechnical
9 work. He was assisted by Dr. C.B. Crouse, a seismic engineer, and Mark Molinari, a Senior
10 Geologist. Dr. Felice and Mr. Molinari have both prepared rebuttal testimony as well.

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12 DATED: March 24, 1999

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15 Katy Chaney
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